

# **Wildlife Permeability along Interstate 4**

## **Transportation SubTeam Report**

to

**Florida Panther Recovery Implementation Core Team and  
US Fish and Wildlife Service**

**June 2020**

## Transportation Subteam Members

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The Mission of the Panther Recovery Implementation Team Transportation Subteam is to identify and prioritize panther-vehicle collision areas and recommend risk-reduction measures. One of the recovery objectives for the Florida panther is to re-establish at least two additional viable populations outside of south and south-central Florida.<sup>1</sup>

As Florida panthers have been hit by vehicles on Interstate 4 (I-4), and the roadway constitutes a substantial barrier to wildlife movement, the Subteam reviewed the remaining opportunities for large mammal permeability across the I-4 transportation corridor<sup>2</sup>. A key issue is that some opportune locations lack permanently secured connections of compatible habitat for wildlife movement between protected conservation core areas located north and south of I-4. Without these secure habitat connections, opportunities to cross I-4 will be limited.

This document explores the opportunities and constraints at each of these locations based on knowledge at the date of this report. It can be used by agencies and entities who are involved with planning roadways and other land modification projects, or entities involved with establishing conservation lands within and adjacent to the I-4 transportation corridor.

Subsequent study by the Subteam will include a similar review of wildlife corridors<sup>3</sup> and habitat connectivity from the location of the existing panther breeding population in south Florida to central Florida and I-4, as well as identifying additional opportunities and constraints.

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<sup>1</sup> US Fish and Wildlife Service, 2008. Florida Panther Recovery Plan, 3<sup>rd</sup> Revision. P. x.

<sup>2</sup> Transportation Corridor refers to the area associated with one or more linear modes of transportation like highways, railroads or public transit which share a common course. Our assessment for this transport planning corridor includes the extensive land development occurring along I-4, essentially creating linear agglomerations or strip development that significantly magnifies the barrier effects for wildlife movement and further limits viable opportunities for providing functional habitat connections.

<sup>3</sup> Wildlife Corridor for the purposes of this report is defined as an area (typically linear in form, but of varying width) composed of suitable habitat and/or compatible land uses (e.g., certain agricultural and rural land use types) that over time facilitate the movement of wildlife species (in particular the Florida panther) between two or more larger protected conservation areas. This definition implies concepts of connectivity outlined in the 1998 Florida Greenways and Trails System Plan (the ability to create functionally contiguous blocks of land or water through linkage of similar ecosystems or native landscapes). Wildlife corridors need to be designated as conservation lands and/or agricultural preservation areas to secure their long-term function for wildlife movement and other ecosystem processes.

Remaining Opportunities along I-4<sup>4</sup> (from west to east) – See Table 1 below

<u>Block</u>	<u>Description</u>
A.	East Hillsborough County Agricultural Areas
B.	Saddle Creek (aka Tenoroc)
C.	Green Swamp/Hilochee WMA Osprey Tract Area
D.	Reedy Creek

Completed Projects – See Table 2 below

- E. Volusia County - Tiger Bay State Forest

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<sup>4</sup> This list reflects the major opportunities that exist with current conditions. There may be additional opportunities in the future beyond those areas listed here.

**LEGEND**

**MAJOR ROADS**

- I-4
- INTERSTATES/TOLL ROADS

**BOUNDARY**

- COUNTY BOUNDARY

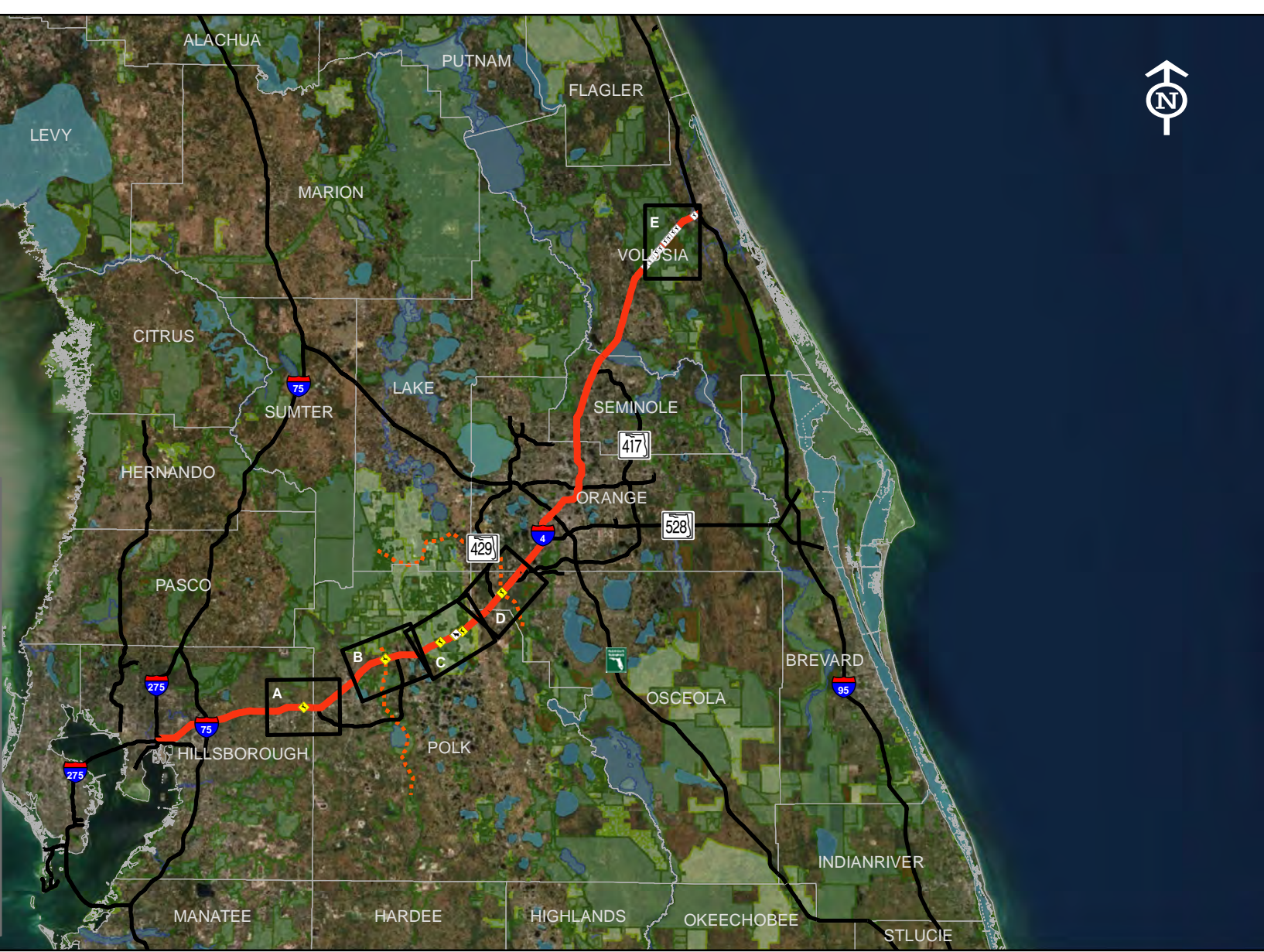
**WILDLIFE CROSSINGS**

- EXISTING WILDLIFE CROSSINGS
- POTENTIAL WILDLIFE CROSSINGS
- TARGET WILDLIFE CORRIDOR

**ENVIRONMENTAL**

- MAJOR WATERS
- MITIGATION BANKS
- MANAGED LANDS
- FLORIDA FOREVER (POTENTIAL)

0 5 10 20 Miles



**FIGURE 1**

# WILDLIFE PERMEABILITY ALONG I-4

FLORIDA PANTHER RECOVERY IMPLEMENTATION CORE TEAM  
AND US FISH AND WILDLIFE SERVICE

SOURCE: FLMA, MITIGATION BANKS, AND FF (FDEP); WMA (FWC); ROADS, WILDLIFE CORRIDORS AND LEAST COST PATHWAY (FDOT); AERIALS (ARCGIS, 2019)

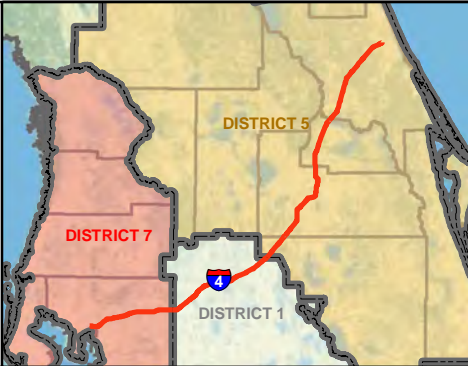


Table 1: Remaining Opportunities along I-4

Block	Description	County	Planning/Funding Status	Supporting Information	Challenges
A	I-4 Hillsborough County	Hillsborough	Not included in any plans or designs. Potential opportunities both east and west of Plant City. FDOT District 7 wildlife camera study beginning.	<p>Proposed location as mapped coincides with a FDOT identified FP Least Cost Pathway and an existing drainage structure. Panther was killed nearby on Polk Parkway in 2016.</p> <p>East and west of Plant City are large swaths of agricultural lands. Many agricultural/rural land uses have been shown compatible with panther movement and foraging activities.</p> <p>The area west of Plant City represents one of the last remaining substantial non-urbanized areas existing on both sides of I-4 west of Orlando.</p>	<p>No designated wildlife corridors or protected conservation lands currently exist.</p> <p>We recommend exploring potential opportunities with FDACS in creating new or expanding existing agricultural preservation zones in the area facilitated through the Rural and Family Lands Protection Program and by using agricultural and habitat conservation easements. Such actions would provide long-term protection for the area and support opportunities for restoration along creeks and other water features that intersect I-4. Any associated water conveyance structures may provide future retrofit opportunities for improving permeability for wildlife movement.</p>
B	I-4 Saddle Creek	Polk	Wildlife overpass currently planned over I-4. A new bridge with shelves is also being planned under SR 33. Neither project is currently funded within FDOT's 5-Year Work Program.	<p>Crossings would connect Peace River/Saddle Creek to the Green Swamp as shown in the target wildlife corridor.</p> <p>Hilochee Wildlife Management Area (WMA) parcel close to I-4 north of this location.</p> <p>Tenoroc Fish Management Area close to I-4 south of this location.</p>	<p>New warehouses are being constructed and other developments are modifying the land use in the immediate vicinity of I-4. University Blvd. to the south and Old Polk City Road to the north which parallel I-4 limit safe wildlife movement. Other roadways to the south including SR 540 and CR 546 limit safe wildlife movement. Additional protected conservation lands are needed to preserve the target wildlife corridor.</p>

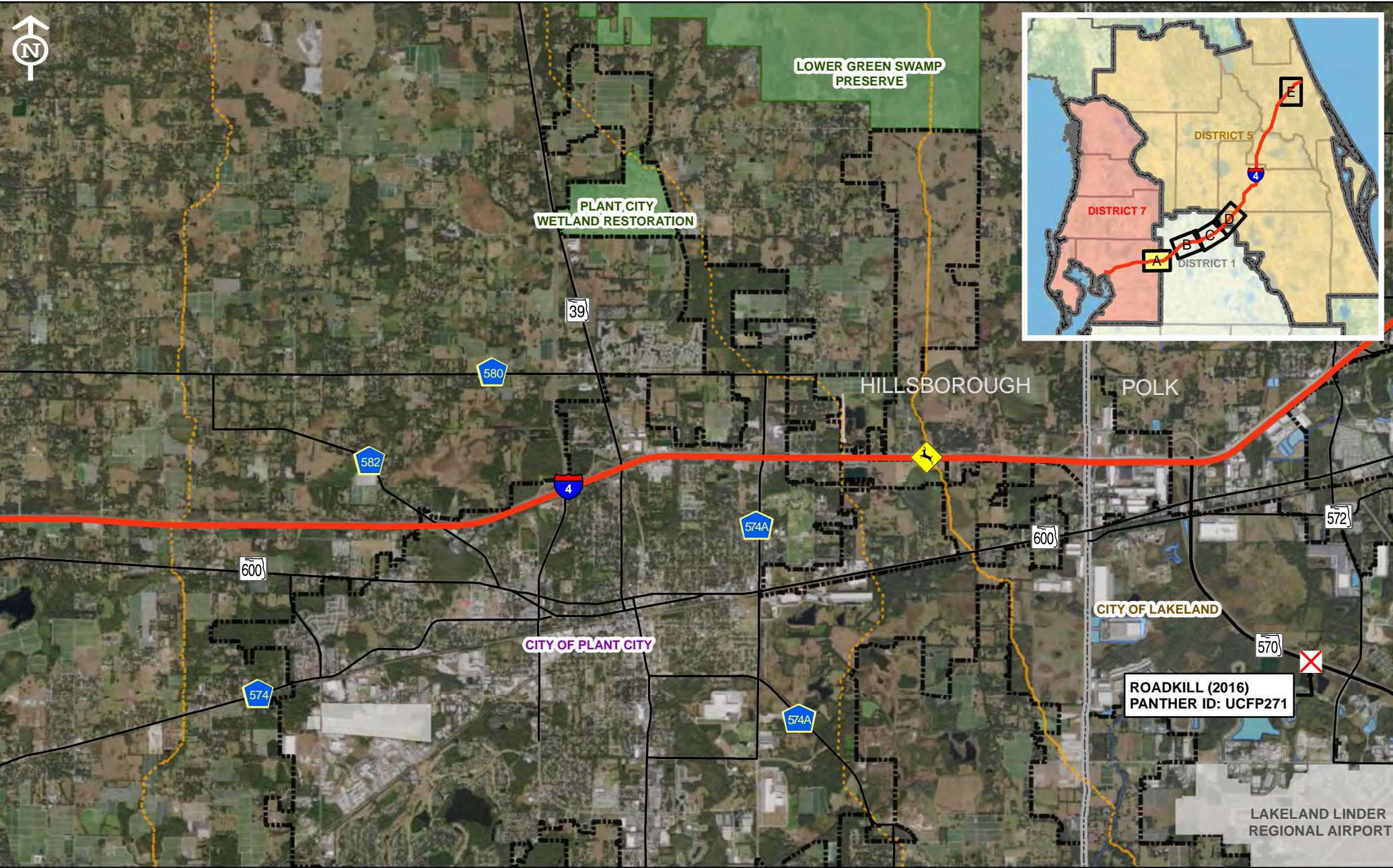
Table 1: continued.

Block	Description	County	Planning/Funding Status	Supporting Information	Challenges
C	I-4 Green Swamp	Polk	<p>The Western Green Swamp (WGS) will be constructed as part of the I-4 at SR 557 Interchange project (201215-3) which goes to construction in June 2020.</p> <p>The Eastern Green Swamp (EGS) crossing has been identified by FDOT as another preferred alternative. No funding available.</p> <p>Other potential upland crossing locations were identified by Dr. Dan Smith.</p>	<p>The WGS crossing lies adjacent to the Hilochee WMA with conservation lands on both sides.</p> <p>The EGS crossing also lies adjacent to the Hilochee WMA.</p> <p>There is potential to combine an upland wildlife overpass with a trail crossing associated with existing conservation/recreation lands managed by FWC.</p>	<p>Florida Forever conservation lands identified both north and south of this crossing. Specifically, there is a need to the south as there are no designated wildlife corridors and the land uses become more urbanized approaching Lake Alfred and Winter Haven presenting several gaps to creating viable, continuous habitat connections.</p> <p>Similarly, for EGS there is a lack of protected conservation lands and a defined wildlife corridor to connect to Reedy Creek across US 27 and US 17-92.</p> <p>Proposed upland crossings lack funding.</p>
D	I-4 Reedy Creek	Orange	Wildlife shelves are planned as part of the I-4 Ultimate bridge widening	Two panther vehicle collisions within 0.6 miles of Reedy Creek bridge crossing.	<p>Celebration Blvd, a parallel road, does not include any crossing features.</p> <p>Need to hide wildlife fencing and/or make it aesthetically acceptable for Walt Disney World and the adjacent tourism area.</p> <p>Need additional conservation lands along the target wildlife corridor preserved.</p>

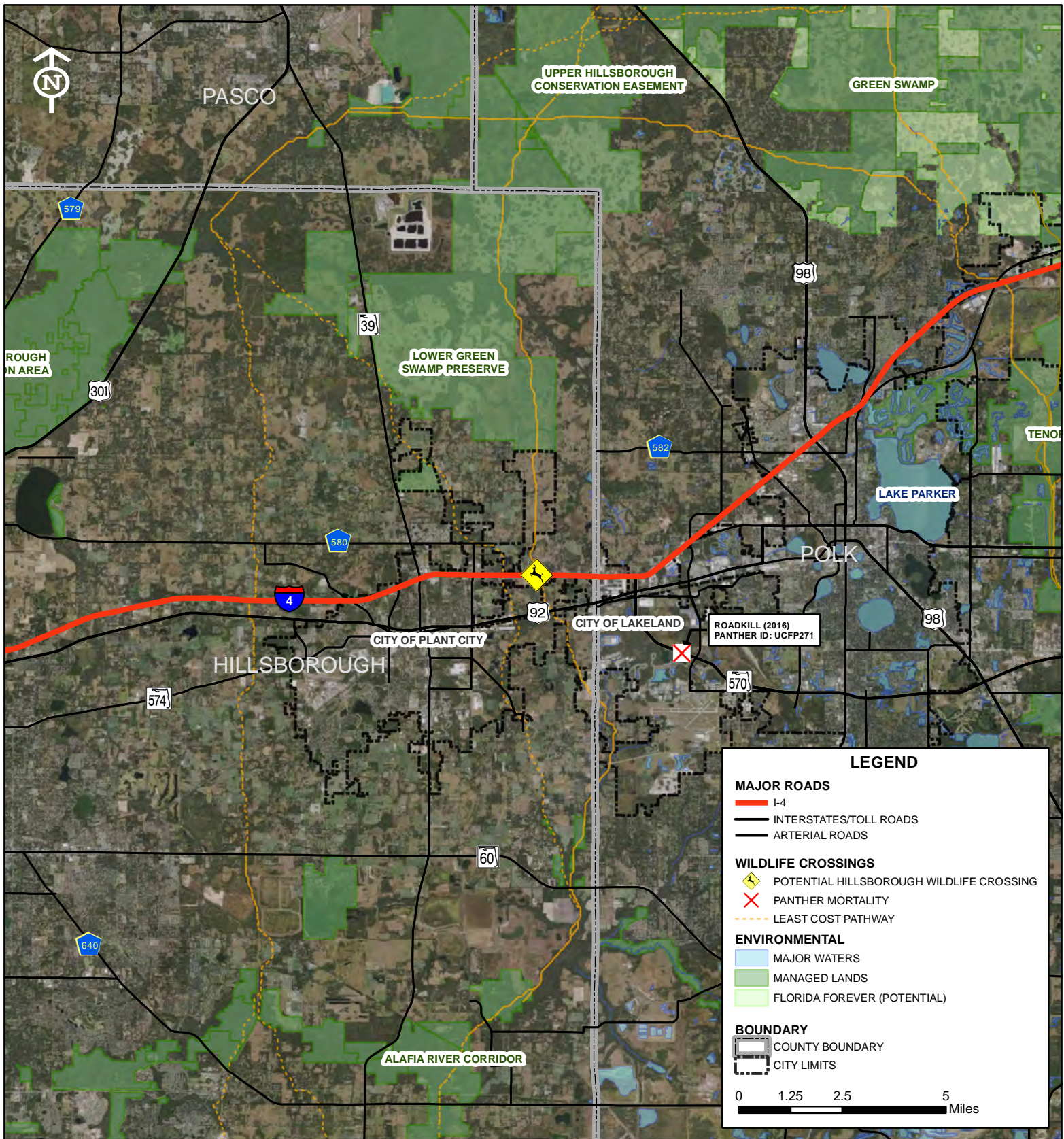
Table 2: Completed Projects

Block	Description	County	Planning/Funding Status	Supporting Information	Challenges
E	I-4 Volusia County – Tiger Bay State Forest	Volusia	Four bridges and five culverts designed for large and small wildlife species, respectively, along with wildlife fencing were completed in 2016.	Wildlife camera monitoring is kicking off.	One of the four bridges (located at approx. mm 127) is in an area where adjacent lands are not permanently protected. Viability of the wildlife crossing structure is jeopardized by incompatible land uses.









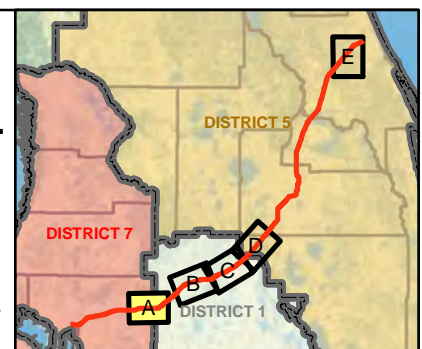
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WILDLIFE CROSSINGS  
POLK COUNTY

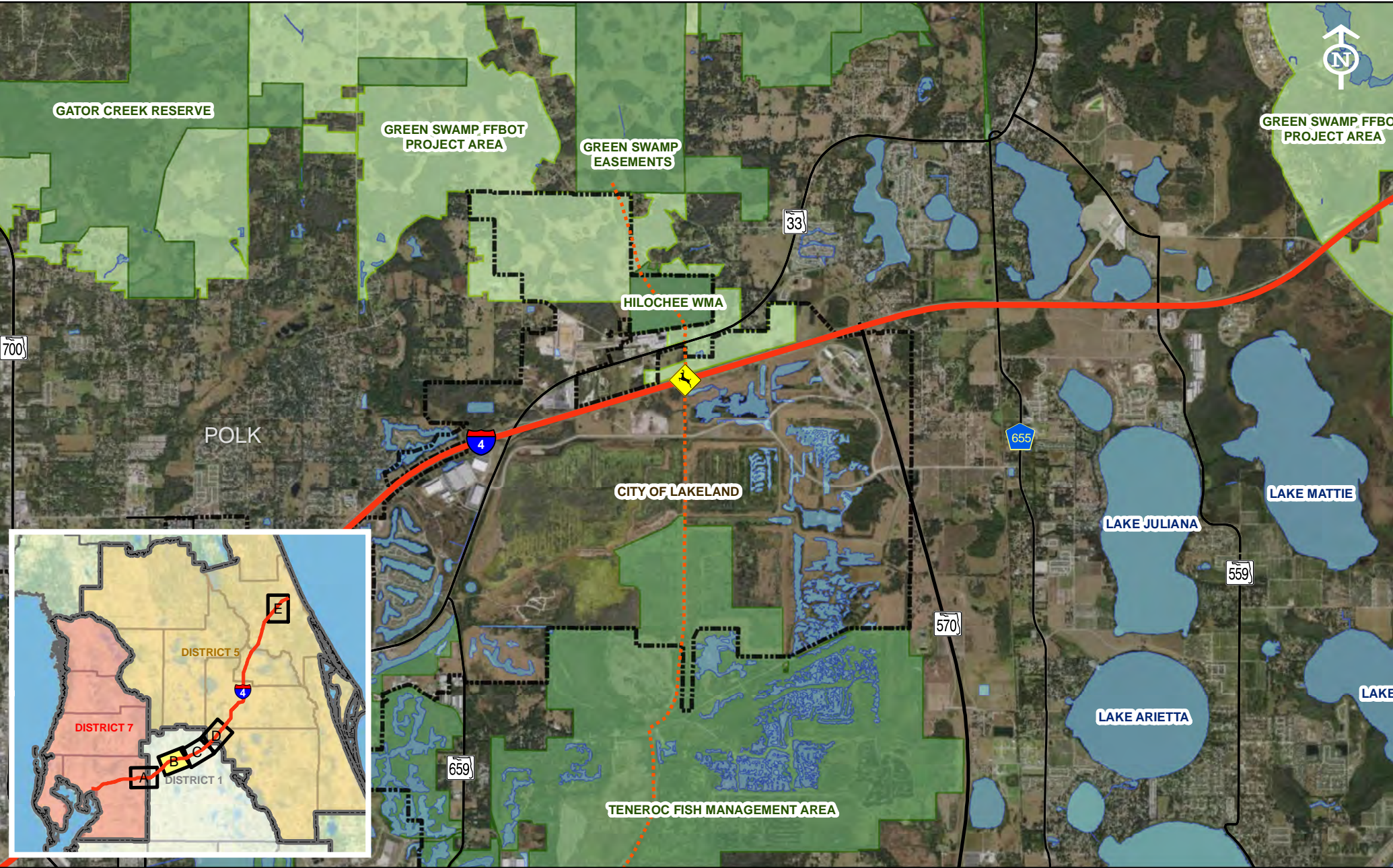
## WILDLIFE PERMEABILITY ALONG I-4

FLORIDA PANTHER RECOVERY IMPLEMENTATION CORE TEAM  
AND US FISH AND WILDLIFE SERVICE

SOURCE: FLMA, MITIGATION BANKS, AND FF (FDEP); WMA (FWC); ROADS, WILDLIFE CORRIDORS  
AND LEAST COST PATHWAY (FDOT); AERIALS (ARCGIS, 2019)







**BLOCK "B"**

POTENTIAL WILDLIFE CROSSING  
POLK COUNTY

**WILDLIFE PERMEABILITY ALONG I-4**

FLORIDA PANTHER RECOVERY IMPLEMENTATION CORE TEAM  
AND US FISH AND WILDLIFE SERVICE

SOURCE: FLMA, MITIGATION BANKS, AND FF (FDEP); WMA (FWC); ROADS, WILDLIFE CORRIDORS AND LEAST COST PATHWAY (FDOT);  
AERIALS (ARCGIS, 2019)

**MAJOR ROADS**

- I-4
- INTERSTATES/TOLL ROADS
- ARTERIAL ROADS

**WILDLIFE CROSSINGS**

- SC#2 (FDOT PREFERRED)
- ARTERIAL ROADS
- TARGET WILDLIFE CORRIDOR

**LEGEND**

**ENVIRONMENTAL**

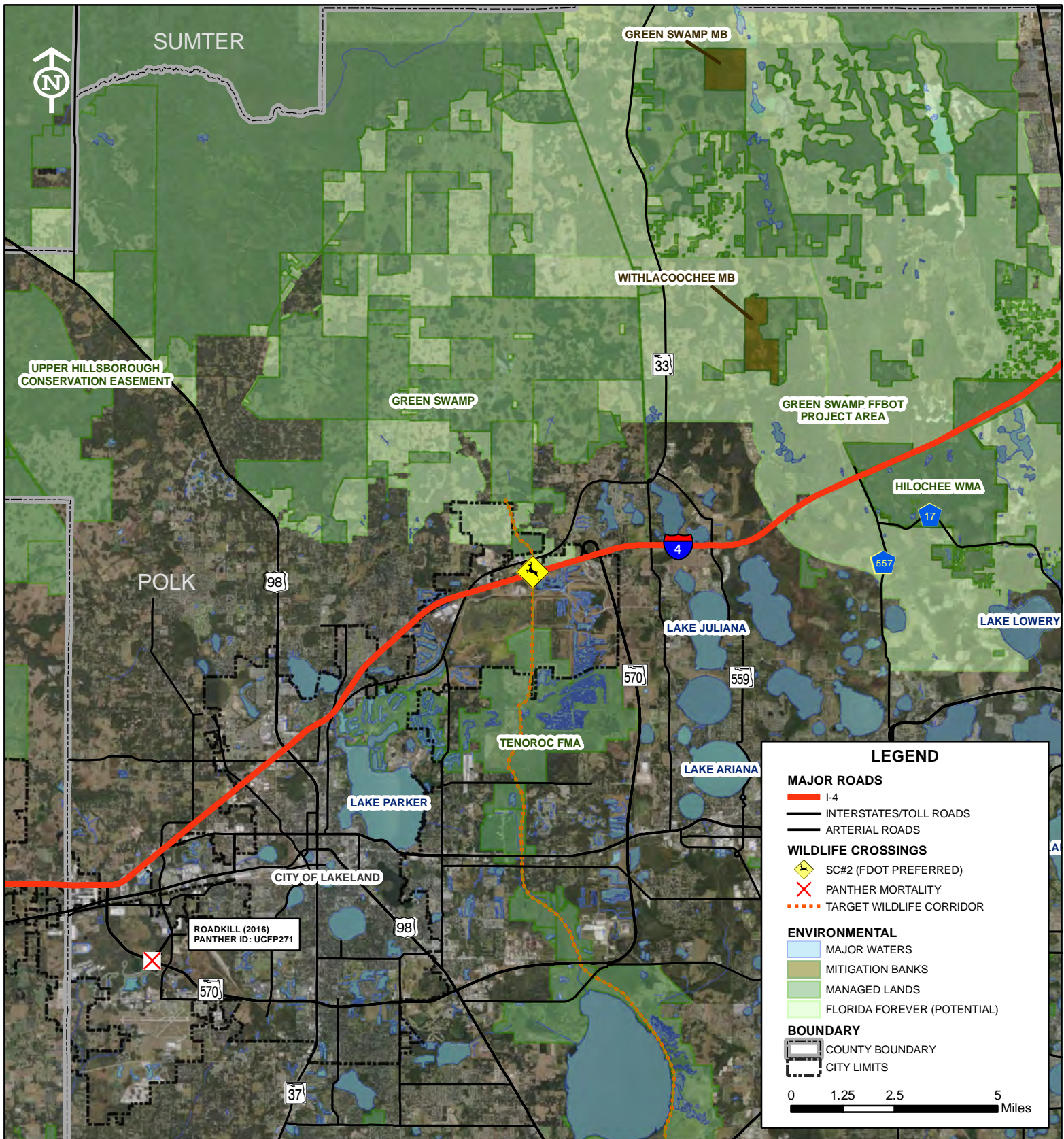
- MAJOR WATERS
- MANAGED LANDS
- FLORIDA FOREVER (POTENTIAL)

**BOUNDARY**

- COUNTY BOUNDARY
- CITY LIMITS

0 0.5 1 2 Miles





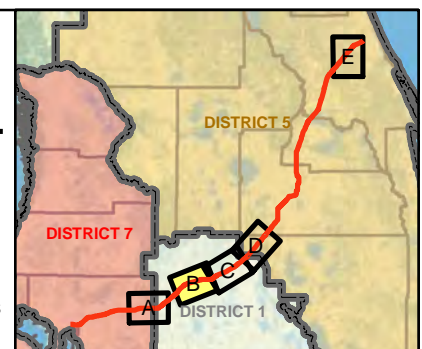
## BLOCK "B1"

WILDLIFE CROSSINGS  
POLK COUNTY

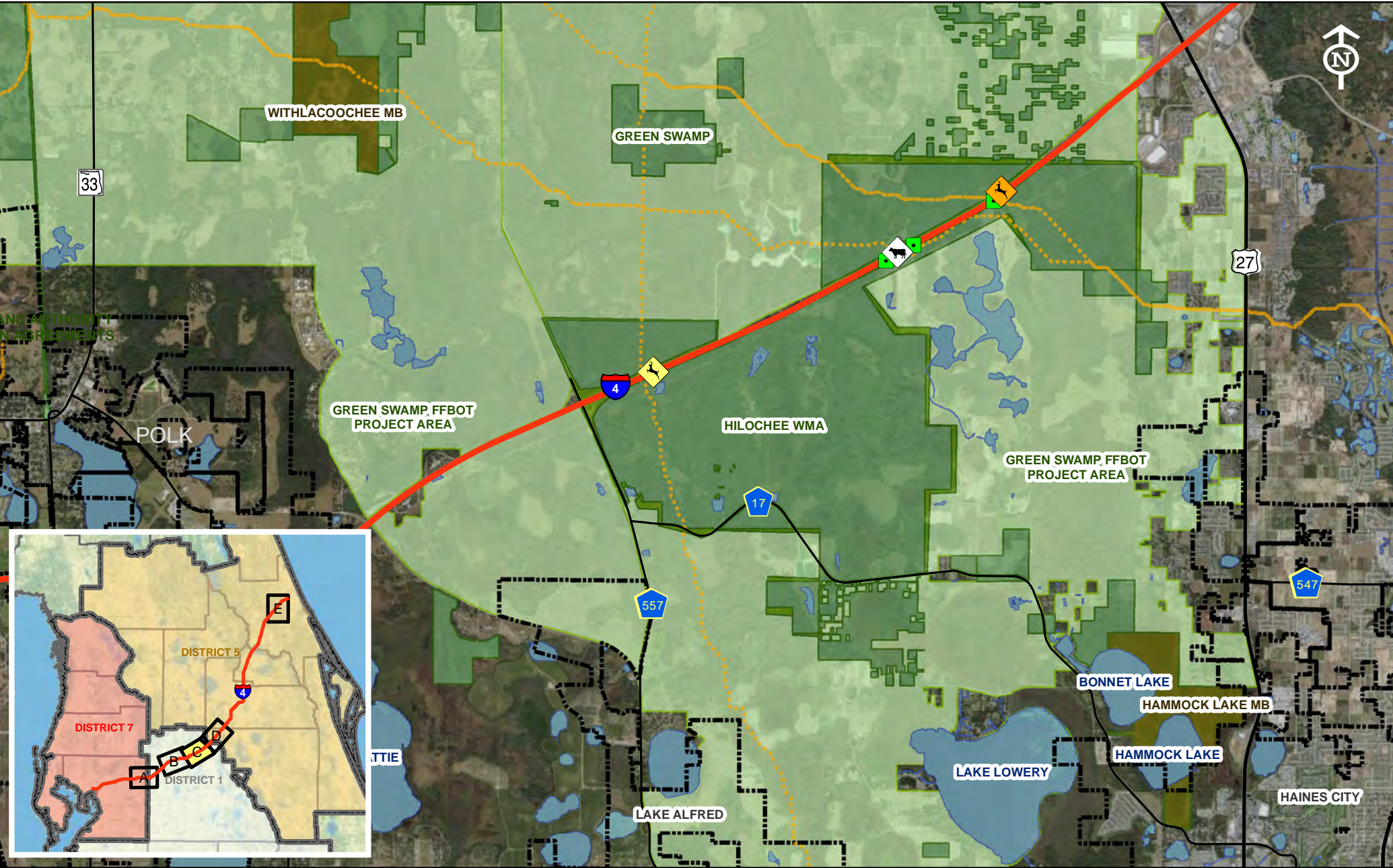
## WILDLIFE PERMEABILITY ALONG I-4

FLORIDA PANTHER RECOVERY IMPLEMENTATION CORE TEAM  
AND US FISH AND WILDLIFE SERVICE

SOURCE: FLMA, MITIGATION BANKS, AND FF (FDEP); WMA (FWC); ROADS, WILDLIFE CORRIDORS  
AND LEAST COST PATHWAY (FDOT); AERIALS (ARCGIS, 2019)







# BLOCK "C"

POTENTIAL WILDLIFE CROSSING  
POLK COUNTY

# WILDLIFE PERMEABILITY ALONG I-4

FLORIDA PANTHER RECOVERY IMPLEMENTATION CORE TEAM  
AND US FISH AND WILDLIFE SERVICE

SOURCE: FLMA, MITIGATION BANKS, AND FF (FDEP); WMA (FWC); ROADS, WILDLIFE CORRIDORS AND LEAST COST PATHWAY (FDOT); AERIALS (ARCGIS, 2019)

**MAJOR ROADS**

- I-4
- INTERSTATES/TOLL ROADS
- ARTERIAL ROADS

**WILDLIFE CROSSINGS**

- POTENTIAL UPLAND CROSSING
- WGS#1 (JOHNSON ENG. PREFERRED)
- EXISTING CATTLE CROSSING
- EGS#3 (JOHNSON ENG PREFERRED)
- LEAST COST PATHWAY

**LEGEND**

**ENVIRONMENTAL**

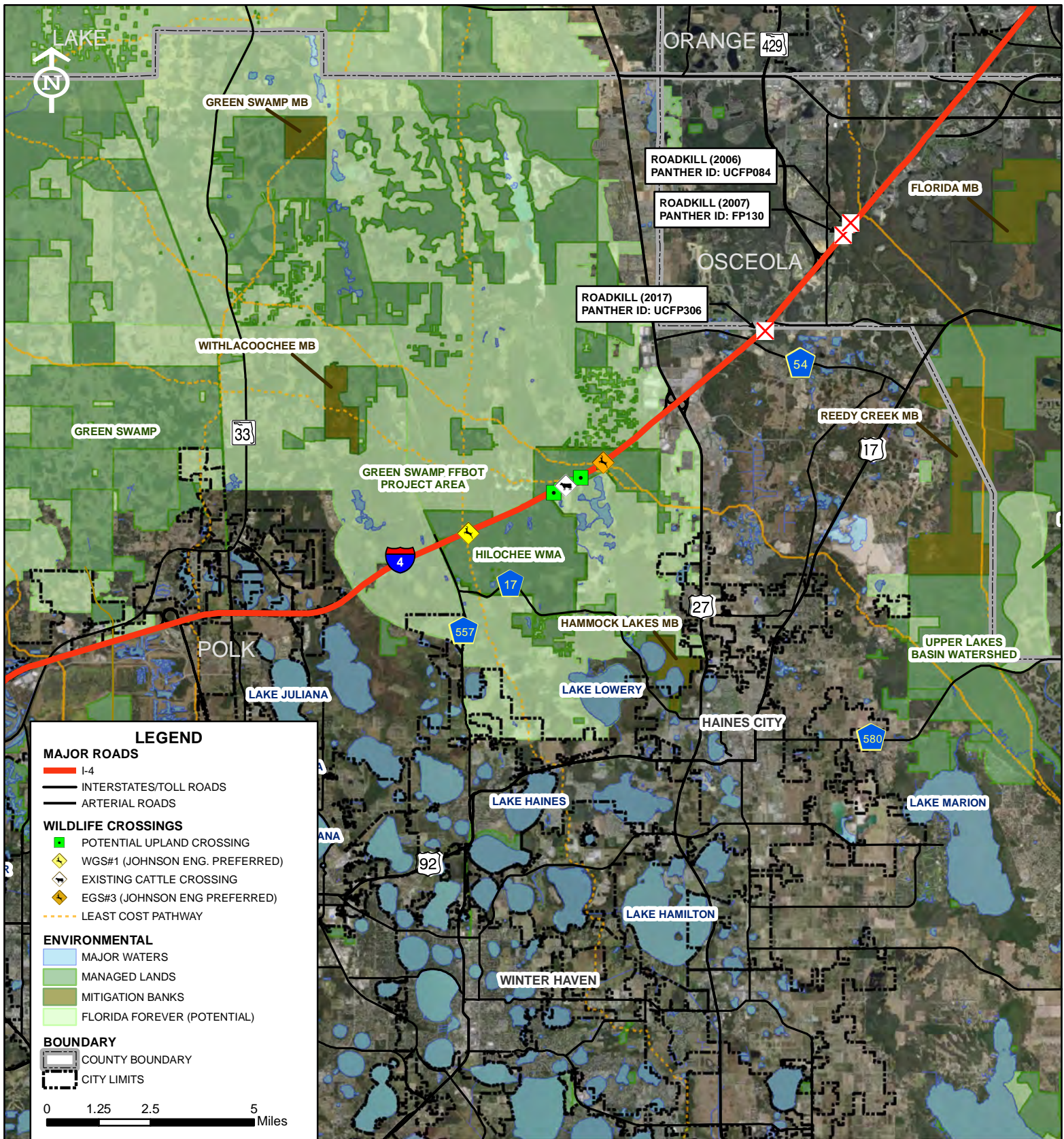
- MAJOR WATERS
- MANAGED LANDS
- MITIGATION BANKS
- FLORIDA FOREVER (POTENTIAL)

**BOUNDARY**

- COUNTY BOUNDARY
- CITY LIMITS

0 0.5 1 2 Miles





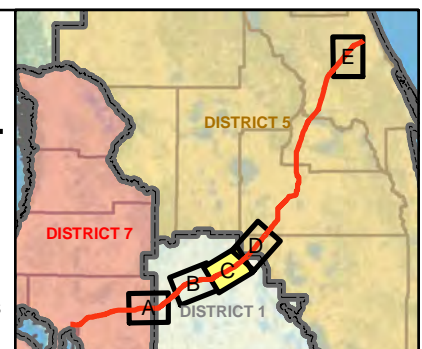
## BLOCK "C1"

WILDLIFE CROSSINGS  
POLK COUNTY

## WILDLIFE PERMEABILITY ALONG I-4

FLORIDA PANTHER RECOVERY IMPLEMENTATION CORE TEAM  
AND US FISH AND WILDLIFE SERVICE

SOURCE: FLMA, MITIGATION BANKS, AND FF (FDEP); WMA (FWC); ROADS, WILDLIFE CORRIDORS  
AND LEAST COST PATHWAY (FDOT); AERIALS (ARCGIS, 2019)







**BLOCK "D"**

POTENTIAL WILDLIFE CROSSING  
OSCEOLA COUNTY

**WILDLIFE PERMEABILITY ALONG I-4**

FLORIDA PANTHER RECOVERY IMPLEMENTATION CORE TEAM  
AND US FISH AND WILDLIFE SERVICE

SOURCE: FLMA, MITIGATION BANKS, AND FF (FDEP); WMA (FWC); ROADS, WILDLIFE CORRIDORS AND LEAST COST PATHWAY (FDOT); AERIALS (ARCGIS, 2019)

**MAJOR ROADS**

- I-4
- INTERSTATES/TOLL ROADS
- ARTERIAL ROADS

**WILDLIFE CROSSINGS**

- PANTHER MORTALITY
- BRIDGE WITH WILDLIFE SHELVES

LEAST COST PATHWAY

TARGET WILDLIFE CORRIDOR

**LEGEND**

**ENVIRONMENTAL**

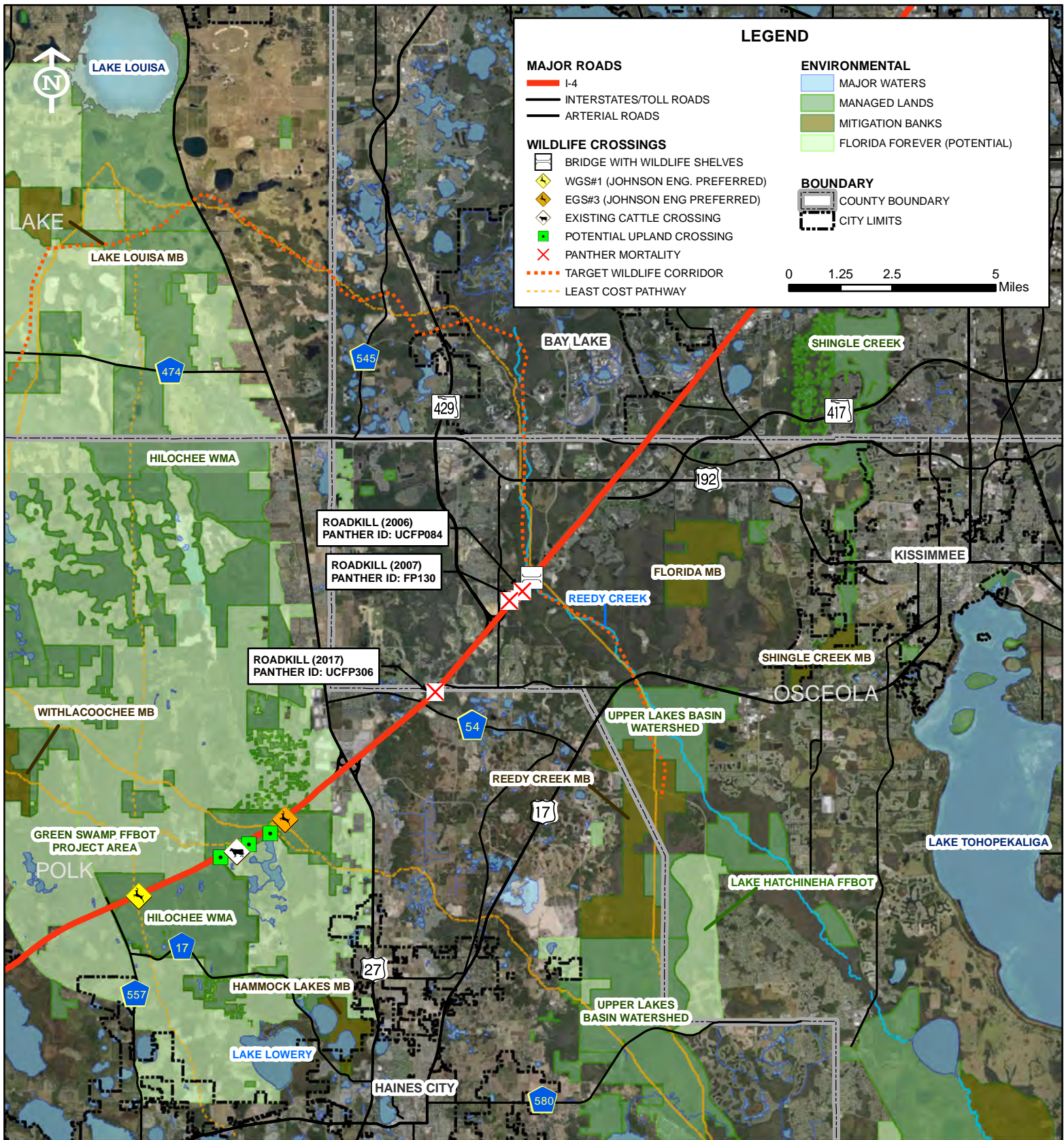
- MAJOR WATERS
- MANAGED LANDS
- MITIGATION BANKS
- FLORIDA FOREVER (POTENTIAL)

**BOUNDARY**

- COUNTY BOUNDARY
- CITY LIMITS

0 0.5 1 2 Miles





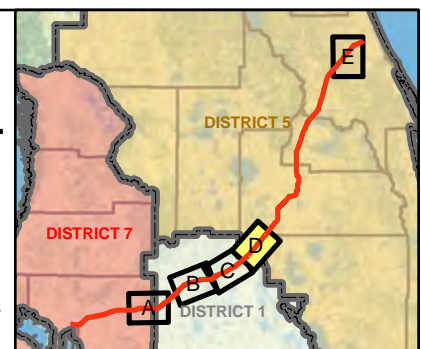
## BLOCK "D1"

WILDLIFE CROSSINGS  
POLK COUNTY

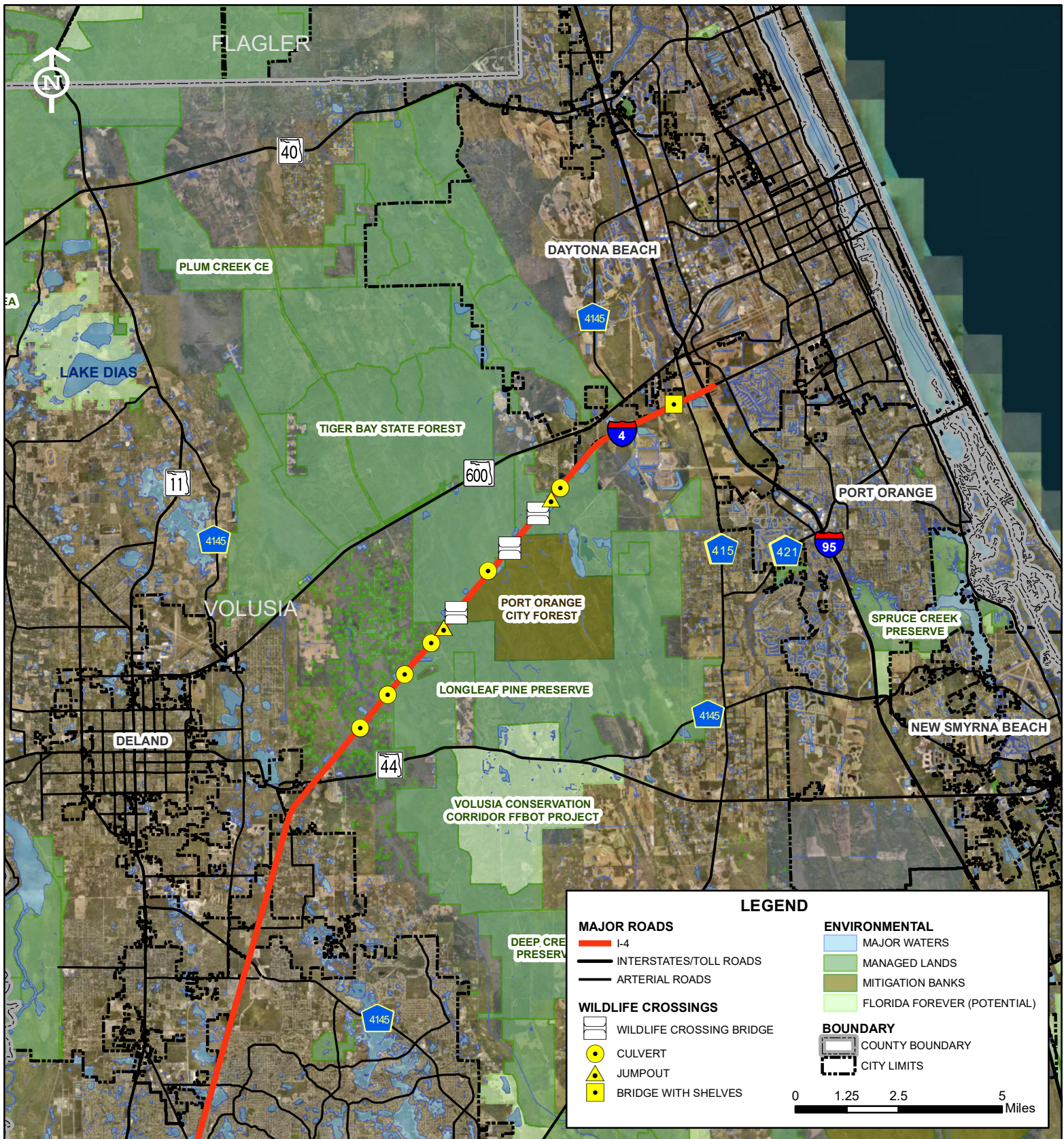
## WILDLIFE PERMEABILITY ALONG I-4

FLORIDA PANTHER RECOVERY IMPLEMENTATION CORE TEAM  
AND US FISH AND WILDLIFE SERVICE

SOURCE: FLMA, MITIGATION BANKS, AND FF (FDEP); WMA (FWC); ROADS, WILDLIFE CORRIDORS  
AND LEAST COST PATHWAY (FDOT); AERIALS (ARCGIS, 2019)







## BLOCK "E"

WILDLIFE CROSSINGS  
VOLUSIA COUNTY

## WILDLIFE PERMEABILITY ALONG I-4

FLORIDA PANTHER RECOVERY IMPLEMENTATION CORE TEAM  
AND US FISH AND WILDLIFE SERVICE

SOURCE: FLMA, MITIGATION BANKS, AND FF (FDEP); WMA (FWC); ROADS, WILDLIFE CORRIDORS  
AND LEAST COST PATHWAY (FDOT); AERIALS (ARCGIS, 2019)

